202401UECM3473OE2a

Start again

Review of preview

Started on	Monday, 26 February 2024, 02:47 PM
Completed on	Monday, 26 February 2024, 02:47 PM
Time taken	19 secs
Grade	**0** out of a maximum of 10 (**0**%)

1

Marks: 1

You are given:

- The number of claims has a Poisson distribution.
- Claims sizes have a Pareto distribution with $\alpha = 2.5$, $\theta = 0.5$.
- The number of claims and claim sizes are independent.
- The observed pure premium should be within 5% of the expected pure premium 90% of the time.

Determine the expected number of claims needed for full credibility. _____

Answer: ✗

Make comment or override grade

Incorrect
Correct answer: 6494.46
Marks for this submission: 0/1.

2

Marks: 1

You are given:

- The number of claims has a Poisson distribution with mean 0.012.
- Claims sizes have a log normal distribution distribution with $\sigma = 0.5$.
- The number of claims and claim sizes are independent.
- The observed pure premium should be within 7% of the expected pure premium 99% of the time.

Determine the expected number of exposures needed for full credibility. _____

Answer: ✗

Make comment or override grade

Incorrect
Correct answer: 144906.6
Marks for this submission: 0/1.

3

Marks: 1

You are given:

- The number of claims follows a negative binomial distribution with parameters r and $\beta = 3$.
- Claim severity has the following distribution:

Claim Size	Probability
1	0.36
10	0.26
100	0.38

- The number of claims is independent of the severity of claims.

Determine the expected number of claims needed for aggregate losses to be within 12% of expected aggregate losses with 95% probability. _____

Answer: ✗

Make comment or override grade

Incorrect
Correct answer: 1408.77
Marks for this submission: 0/1.

4

Marks: 1

For a group dental plan, each individual's number of claims follow Poisson distribution with parameter λ. λ varies by individual in accordance with the following distribution:

λ	Probability
1	0.43
2	0.41
5	0.16

Claim sizes follow log normal distribution with parameter μ and σ = 0.70.
Classical credibility techniques are used.
The standard for full credibility of aggregate loss experience is set so that the probability of observed claims being within 6.70% of expected claims is 99%. Determine the number of claims required for full credibility. _____

Answer:

Make comment or override grade

Incorrect
Correct answer: 3759.57
Marks for this submission: 0/1.

5
Marks: 1

The full credibility standard for a company is set according to the methods of classical credibility so that the total number of claims is to be within 2% of the true value with probability P. This full credibility standard is calculated to 911 claims. The standard is altered so that the total cost of claims is to be within 4% of the true value with probability P. The claim frequency has a Poisson distribution and the claim severity had the distribution

$$f(x) = (110-x)/6050.0, \text{ for } 0 < x < 110$$

What is the expected number of claims necessary to obtain full credibility under the new standard? _____

Answer:

Make comment or override grade

Incorrect
Correct answer: 341.625
Marks for this submission: 0/1.

6
Marks: 1

Aggregate claims follows a Pareto distribution with parameters α = 3 and θ = 5. The full credibility standard is set according to the methods of classical credibility so that actual aggregate claims are within 6% of expected aggregate claims 95% of the time. Determine the amount of expected aggregate claims needed for full credibility. _____

Answer:

Make comment or override grade

Incorrect
Correct answer: 8003.333333
Marks for this submission: 0/1.

7
Marks: 1

You are given the following:

- 177,500 exposures are needed for full credibility.
- The 177,500 exposures standard was selected using a normal approximation so that the actual total cost of claims is within 6.0%; of the expected total 95%; of the time.
- The number of claims per exposure follows a Poisson distribution with mean *m*.
- *m* was estimated from the following observed data using the maximum likelihood:

Year	Exposures	Number of Claims
1	16,127	1,274
2	25,827	1,582
3	23,161	1,459

If mean claim severity is 1,249, determine the standard deviation of the claim severity distribution. _____

Answer:

Make comment or override grade

Incorrect
Correct answer: 3954.167567
Marks for this submission: 0/1.

8
Marks: 1

For a group dental plan, each individual's number of claims follows Poisson distribution with parameter λ. λ varies by individual in accordance with gamma distribution with parameter α = 3,θ_1 = 10. Claim sizes follow and inverse Gaussian distribution with parameter μ = 1200, θ_2 = 7.6.Classical credibility techniques are used. The standard for full credibility of aggregate loss experience is set so that the probability of observed claims being within 10% of expected claims is 90%. Determine the number of claims required for full credibility.
_____

Answer:

Make comment or override grade

Incorrect
Correct answer: 45703.338026
Marks for this submission: 0/1.

9
Marks: 1

For an insurance coverage you are given:

- Claim counts follow a Poisson distribution.
- Claim sizes follow an exponential distribution with mean μ.
- μ varies by insured according to a gamma distribution with parameters α = 6 and θ = 280.

The methods of limited fluctuation credibility are used. 2000 expected claims are required for full credibility.
The full credibility standard is that actual claims should be within 7% of expected claims with probability p.
Determine p. _____

Answer:

Make comment or override grade

Incorrect
Correct answer: 0.9596
Marks for this submission: 0/1.

10

Marks: 1

You are given:

- Claim frequency has a Poisson distribution.
- Claims size has a Gamma distribution with $\alpha = 2.5$, θ unknown.
- Using the methods of classical credibility, a full credibility standard of 1050 expected claims has been established so that actual aggregate claim costs will be within 6% of expected aggregate claim costs P% of the time.

Determine P. _____

Answer:

Make comment or override grade

Incorrect
Correct answer: 89.9
Marks for this submission: 0/1.